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Record 1

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Field Name	Contents of Record 1
Size of Record	1489 total bytes in record, 1231 in TX field
Title	Fast Laser -Steam Cleaning by Continuous Liquid-Film Deposition and Pulsed Laser Irradiation of a Moving Surface
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Text of Submission	<p>This document contains drawings, formulas, and/or symbols that will not appear on line. Request hardcopy from ITIRC for complete article.</p> <p>Disclosed is an apparatus for high throughput laser steam cleaning of surfaces. A part to be cleaned, (1) in Fig. 1, is moved continuously as a thin liquid film (2) is continuously deposited on its surface using a nozzle, (3). The liquid film is approximately 1 μm thick. Pulsed laser radiation (4) is applied downstream to superheat the liquid film, producing cleaning action. A typical embodiment uses a KrF laser pulsed at 5 to 20Hz with a 1mm/sec translation speed for the part. The maximum laser pulse rate of 20Hz is limited by the rate at which the thin liquid film can be replenished. In another embodiment, use of "multiplexed scanning" provides a higher throughput (Fig. 2).</p> <p>A high repetition rate (300Hz) KrF laser is scanned perpendicularly to the direction of the part motion in a sawtooth pattern using a galvanometer mirror. Replenishment of the micron thick liquid film is provided by an elongated nozzle or an array of nozzles (*).</p> <p>Reference (*) P. E. Ross, "Dust Busters: Laser Wipe Submicron Motes From Silicon Wafers," Scientific American 262, 6, 86-88 (1980).</p>
Reference (pointer to work)	IBM TDB v39 n3 03-96 p175-176 Order: 96A 60369
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